ABSTRACT

ANGGI MARDIYONO. Expert System to Diagnose Common Carp (Cyprinus carpio) Disease Using Fuzzy Logic. Supervised by SRI NURDIATI, YENI HERDIYENI, and DINAMELLA WAIJUNINGRUM.

Common carp is one of commodity of fresh water fishes which is very interesting and profitable for cultivation. One of problems faced by this cultivation is common carp disease. The disease can kill the fish only in few days or even in few hours. The impact of the disease will reduce the productivity of fish cultivation. Nowadays to diagnose fish disease still uses conventional ways such as PCR (Polymerase Chain Reaction). This method is fast but more costly. On the other hand, diagnosing using clinical indication needs human expert. The result of this research, hopefully, can help farmer to diagnose common carp disease faster and more accurate.

Expert system which is built in this research adopts human expert in diagnosing gold fish disease through clinical indication. The input of this system are temperature, pH, oxygen content, turbidity, ammonia, and physical indication. Fuzzy logic is used to measure quality of water. Fuzzy logic which is used in this case is Mamdani with Centroid defuzzification. Forward chaining is used to detect the disease caused by pathology agent.

The result of the research denoted that the accuracy of diagnosing the disease caused by pathology agent is 100% and the accuracy of measuring quality of water is 80%. From the result it can be concluded that both methods are suitable to diagnose common carp disease.

Keyword : expert system, forward chaining, fuzzy logic, common carp.